

### **REMARKS/ARGUMENTS**

This paper is in response to the Office Action dated February 20, 2009, wherein Claims 1-3, 6-11, 14-18, and 20-25 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,734,289 to Khudoshin, Claim 4 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Khudoshin in view of U.S. Patent No. 5,994,883 to Liu, and Claims 5 and 19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Khudoshin. Additionally, Claims 17-25 were rejected under 35 U.S.C. § 101. Finally, Applicant notes with appreciation the Examiner's indication that Claims 12 and 13 would be allowable if rewritten in independent form including all of the recitations of the base claims and any intervening claims. While Applicant appreciates the Examiner's indication that these claims would be allowable, Applicant has not amended Claims 12 and 13 as suggested in light of the arguments below with regard to independent Claim 1. The Examiner's further consideration of this application is requested in light of the amendments made above and the following comments.

The Examiner objected to the recitation "the passage" of Claim 1. Applicant points out that "the passage" is not a physical element of the claim. To further clarify Claim 1, along with Claims 3 and 23 which also contain the recitation, Applicant has amended the claims to simply recite "passage." In the Office Action, the Examiner further objected to the recitation "the control central" of Claims 14-17 for lack of antecedent basis. Applicant notes that Claims 7-8, 10-11, and 14-16 are the only claims that contain this recitation. To further clarify the claims and address the lack of antecedent basis, Applicant has amended the first instance of "the control central" in Claim 7 to recite "a control central."

The present invention comprises a system and various methods for controlling and triggering a TRIAC device by generating a pulse at the gate of the TRIAC based on a comparison of a voltage limit value and a voltage measured at the gate. Claim 1 has been amended to recite that the voltage limit value is **adjustable**. Similarly, Claim 23 recites **adjusting** the voltage limit value. In contrast, Khudoshin clearly teaches a threshold detector that outputs a signal "when the voltage on the gate terminal of the TRIAC is between two

**predetermined** thresholds of opposite polarity.” (Khudoshin, Col. 1, lines 46-49). This fixed voltage limit value system described in Khudoshin lacks the adjustability necessary to achieve the advantages provided by Claims 1 and 23 of the present application. In particular, the adjustable voltage limit value allows the system to control the time duration from a voltage limit detection to a zero crossing of the feed network voltage as the load current varies. The Khudoshin reference, however, relies on fixed voltage limit values, which leads to unpredictable time durations from voltage limit detection to zero crossing when subject to variations in load current. (See Present Application, Figure 3 and Para. [0008]). Too short a duration may provide the system insufficient time to trigger actuation of the TRIAC prior to the zero crossing, and too long a duration may exceed the pulse length used to actuate the TRIAC. As a result, Khudoshin teaches a system subject to failures when a wide range of current values are applied to the load. The present application avoids such failures due to the additional feature of an adjustable voltage limit value. Thus, the Applicant submits the present application is patentably distinct from Khudoshin.

The Applicant has also amended independent Claim 17 to recite a method using a **single** comparator. In contrast, Khudoshin clearly teaches a system requiring two comparators, one for each of a positive and a negative voltage limit value. (Khudoshin, Figure 1 and Col. 2, lines 59-66). By commuting an input of the single comparator from the positive voltage limit to the negative voltage limit, and vice versa, at every transition received by the comparator, the method of Claim 17 eliminates the need for the additional comparator of Khudoshin. Thus, the present invention may be implemented at a lower cost than the system of the cited reference. As such, the Applicant submits that Claim 17 patentably defines over Khudoshin.

Finally, Claims 17-25 stand rejected under 35 U.S.C. §101 as being directed to non-statutory subject matter. Specifically, the Office Action asserts that Claims 17-25 are not tied to a particular apparatus and do not transform the underlying subject matter to a different state or thing. Applicants respectfully disagree with the rejection of Claims 17-22. In particular, independent Claim 17, from which Claims 18-22 depend, is tied to a comparator that compares the voltage limit value at the gate of a TRIAC and a voltage measured at the TRIAC gate.

Appl. No.: 10/595,931  
Amdt. dated July 20, 2009  
Reply to Office Action of February 20, 2009

Additionally, Applicant has amended independent Claim 23, from which Claims 24-25 depend, to tie an operation that is not extra solution activity to a particular apparatus, namely the control unit. For at least these reasons, Applicant respectfully submits that the rejections of Claims 17-25 under 35 U.S.C. §101 are overcome.

The Applicant has made significant contributions to the art which are neither taught nor suggested by the cited prior art. Accordingly, it is submitted that the application is now in condition for allowance and such action is respectfully submitted. Should the Examiner have any questions, comments or proposed claim amendments, he is encouraged to contact the undersigned by telephone so that allowance of this application can be expedited.

The patentability of the independent claim has been argued as set forth above and thus the Applicant will not take this opportunity to argue the merits of the rejection with regard to the dependent claims. However, the Applicant does not concede that the dependent claims are not independently patentable and reserves the right to argue the patentability of the dependent claims at a later date if necessary.

Appl. No.: 10/595,931  
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It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefor (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,

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